a laser diode light source disposed within said housing for emitting a light beam within said inner flow portion;

a first photodiode disposed within said housing positioned opposite and substantially normal to said laser diode light source such that substantially full strength of an unimpeded generated light beam is detected by said first photodiode;

a second photodiode disposed within said housing adjacent said first photodiode positioned such that a baseline level of an unimpeded generated light beam is detected by said second photodiode; and

circuitry coupled to said first and second photodiodes to monitor the ratio of light intensities measured by said first and second photodiode to indicate the presence of particulate within an introduced fuel flow.

4. (Amended) An in-line particulate detector in accordance with claim 1, wherein a fuel containing particulates will cause a generated light beam to be scattered, and the light intensity measured by second photodiode will increase above the baseline level and the light intensity reaching first photodiode will decrease.

15. (Amended) A remote in-line particulate detector comprising:

a housing having an inner flow portion, which housing is removably disposable between adjacent portions of pipeline to permit a fuel flow from a fuel source through said inner flow portion to a fuel consumer;

a laser diode light source disposed within said housing for emitting a light beam within said inner flow portion;

a first photodiode disposed within said housing positioned opposite and substantially normal to said laser diode light source such that

substantially full strength of an unimpeded generated light beam is detected by said first photodiode;

a second photodiode disposed within said housing adjacent said first photodiode positioned such that a baseline level of an unimpeded generated light beam is detected by said second photodiode; and

circuitry coupled to said first and second photodiode to monitor the ratio of light intensities measured by said first and second photodiodes to indicate the presence of particulate within an introduced fuel flow; and

at least one remote unit for transmitting signals generated from said first and second photodiodes;

a central station; and

a communications link.

16. (Amended) A remote in-line particulate detector in accordance with claim 15, wherein said signals represent light intensities measured by said first and second photodiodes.

37. (Amended) A particulate detector comprising:

a housing having an inner flow portion;

a laser diode light source disposed within said housing for emitting a light beam within said inner flow portion;

a first photodiode disposed within said housing positioned opposite and substantially normal to said laser diode light source such that substantially full strength of an unimpeded generated light beam is detected by said first photodiode;

a second photodiode disposed within said housing adjacent said first photodiode positioned such that a baseline level of an unimpeded generated light beam is detected by said second photodiode; and

circuitry coupled to said first and second photodiode to monitor the ratio of light intensities measured by said first and second photodiodes to indicate the presence of particulate within an introduced flow.

38. (Amended) An in-line particulate detector for insertion within a pipeline, said detector comprising:

a laser diode light source to be disposed within said pipeline for emitting a light beam within an inner flow portion of said pipeline;

a first photodiode to be disposed within said pipeline positioned opposite and substantially normal to said laser diode light source such that substantially full strength of an unimpeded generated light beam is detected by said first photodiode;

a second photodiode to be disposed within said pipeline adjacent said first photodiode positioned such that a baseline level of unimpeded generated light beam is detected by said second photodiode; and

circuitry coupled to said first and second photodiode to monitor the ratio of light intensities measured by said first and second photodiodes to indicate the presence of particulate within an introduced flow.

REMARKS

This application has been carefully reviewed in light of the Official Action dated October 4th, 2001. The Examiner has objected to claim 15. The Examiner has rejected claims 10-14 and 32-36 under 35 USC §112 as being indefinite. The Examiner has rejected claims 1, 4, 23, 26, and 37-38 under 35 USC §102(b) as being anticipated by Conklin et al. Next, the Examiner has rejected claims 2-3 and 24-25 under 35 USC §103(a) as being unpatentable over Conklin et al. Next, the Examiner has rejected claims 5-9 and 27-30 under 35 USC §103(a) as being unpatentable over Conklin et al in view of Infante. Next, the Examiner has rejected claims 15 and 16 under 35 USC §103(a) as being unpatentable over Conklin et al. in view of Tanaka et al. Next, the Examiner has rejected claims 17, 18, 20 and 21 under 35 USC §103(a) as being unpatentable over Conklin et al. in